June 19, 1934. A. PRACHE 1,963,447

LOOSE LEAF BINDER

Filed May 24, 1932

Fig.1

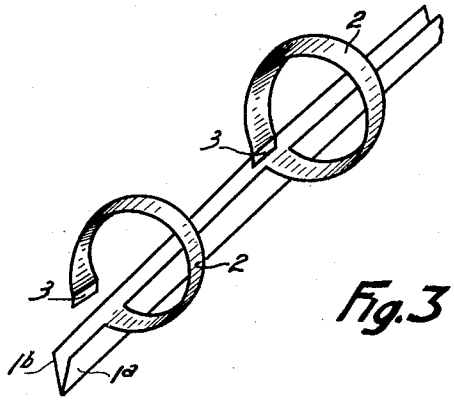



Fig.2

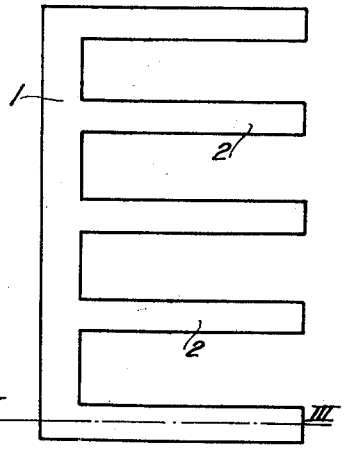



Fig.3

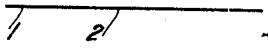



Fig.4

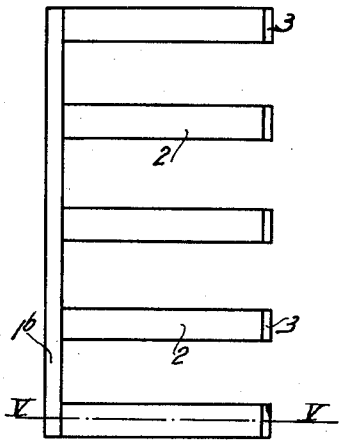



Fig.6

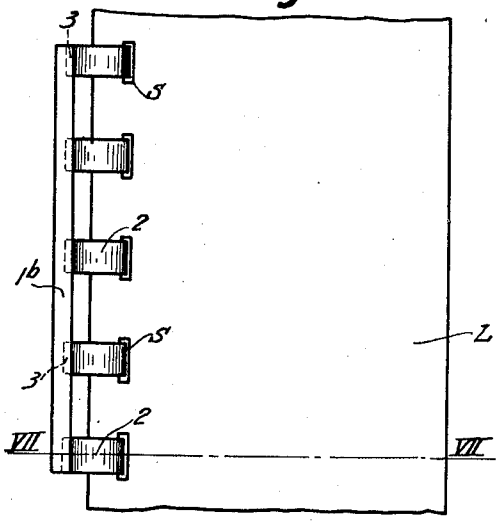



Fig.5

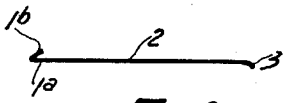



Fig.7

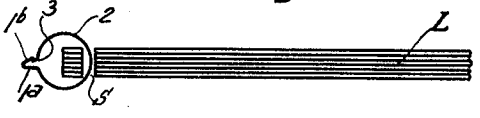



Fig.8

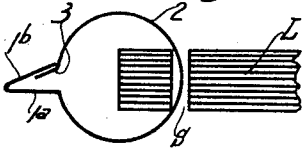
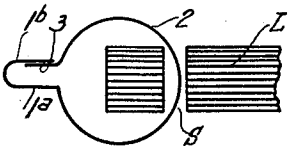



Fig.9

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Patented June 19, 1934 1,963,447

# UNITED STATES PATENT OFFICE

1,963,447

## LOOSE-LEAF BINDER

André Prache, Paris, France

Application May 24, 1932, Serial No. 613,276
In France January 15, 1932

2 Claims. (Cl. 129—23)

The present invention relates to loose-leaf binders for pads, copybooks, books or the like, and has more particular reference to the type of such temporary binders comprising multiple rings attached to a common hinge rib or strip.

The primary object of the invention is to provide a loose-leaf binder of the aforesaid type but of considerably simplified and improved construction and capable of a more reliable and convenient use and operation than those proposed heretofore.

A further object of the invention is to provide a loose-leaf binder of this type capable of being manufactured and formed very cheaply by ordinary punching, folding or bending operations.

A still further object of the invention is to provide a loose-leaf binder wherein the leaf retaining rings and the hinge rib or strip uniting the rings to one another are so shaped and correlated as to make the engagement or disengagement of one or more leaves an almost instantaneous operation, while ensuring a steady hold of the rings on the leaves without any locking means.

Still a further object of the invention is to provide a loose-leaf binder whose constitutive rings and hinge rib or strip are so arranged as to leave to said leaves their æsthetical appearance without defacing the pad, copybook or book which they build up, said rings and rib being decoratable to partake of said appearance if required.

With these and such other objects in view as will incidentally appear hereafter, the invention comprises the novel arrangement and combination of parts that will now be described in detail with reference to the accompanying drawing forming a part of this disclosure and exemplifying said invention.

Figure 1 is a fragmentary perspective view of the improved binder showing one leaf-retaining ring in disengaged or open position and one ring engaged into the channel rib.

Figure 2 is a plan view showing the punched blank from which the binder is made.

Figure 3 is a sectional view on the line III—III of Fig. 2.

Figure 4 is a plan view with the side strip, on the left, bent or crimped into channel shape away from one side face and the free ends of the tongues, on the right, bent into the form of lugs or hooks away from the opposite side face.

Figure 5 is a sectional view on the line V—V of Fig. 4.

Figure 6 is a plan view showing the binder as applied to a pad, showing the retaining rings engaged through the slots in the adjacent edges of the pad leaves and having their bent or hooked ends sprung into the channel rib forming the hinge or "back bone" of the pad.

Figure 7 is a sectional view on the line VII—VII of Figure 6.

Figure 8 is an enlarged view of a fragment of Fig. 7.

Figure 9 is a view similar to Fig. 8 showing a slight modification.

Like reference characters designate like parts throughout the several views.

As illustrated, the loose-leaf binder for pads, copybooks, books or the like comprises a rectilinear channel which may be made of any metal, alloy or other suitable material having the required rigidity or stiffness. This channel is obtained by folding, crimping or doubling upon itself the side strip 1 of the punched blank shown in Figure 2 to provide two converging legs $1^a$, $1^b$ which may meet angularly as shown in Figure 8 or roundly as shown in Figure 9 and which delineate a constricted channelled area of suitable size and depth.

The blank shown in Figure 2 comprises several tongues 2 formed integral with the one longitudinal edge of the strip 1. Each tongue 2 is bent at its free end off the plane of the blank, as shown in Figures 4 and 5, to form a lug or hook 3 which is oppositely directed with respect to the leg $1^b$ of the rib. Moreover, each tongue 2 is curved upon itself into loop or ring shape in order to freely engage elongated slots S formed in the adjacent edge portions of the leaves L to be removably i. e. loosely bound together as shown in Figures 6 and 7. The slots S are advantageously aligned.

The arrangement comprising relatively narrow rings or loops 2 and spaces or intervals twice or three times as wide as the said rings is to be regarded as a preferred embodiment because obviously rings or loops 2 of a relatively small width are more flexible or resilient than wider rings, while the manipulation or handling of the said rings is easier as explained hereafter if clearance spaces of a sufficient size are left between them for facilitating the access of the user's fingers.

The method of producing the improved loose-leaf binder as described will be readily understood from Figures 2 to 5. In Figure 2 is shown, on the flat, the blank, for example of light flexible metal or alloy, from which the binder is

made. This blank comprises a side strip 1 and several spaced straight tongues 2 formed integral with it and extending at right angles to it to provide a comb-like structure, the widths of the tongues 2 and intermediate spaces being suitably reckoned in accordance with the aforesaid considerations. Midway or substantially midway of its width, the strip 1 is doubled acutely (see Fig. 8) or roundly (see Fig. 9) or folded upon itself to form a channel comprising a leg $1^a$ carrying the tongues 2 and a free leg $1^b$. Each tongue 2 is bent obtusely at its free end off its general plane to form a hook or lug 3 extending oppositely to the leg $1^b$ of the channel or rib. Finally, each tongue 2 is bent upon itself to form a ring or loop (see Fig. 1) the outline of which may be round.

This method may be carried out by any convenient manual or mechanical means.

The operation of the improved loose-leaf binder thus constructed and made is easy to understand. As each tongue 2 is flexible and resilient per se due to the metal or other material of which it is purposely made and also due to its spring-like arrangement with respect to the supporting channel $1^a$—$1^b$, the end lug or hook 3 may be easily snapped or sprung into said channel and is retained in abutting relation by its springy action against the free leg $1^b$. When it is desired to disengage any ring or loop 2 from the channel, all that is necessary is to suitably and slightly press upon the body or bulging portion of said ring to spring its lug or hook 3 off the leg $1^b$ of the channel. This operation is clearly brought out in Figure 1 which shows one ring engaged in the channel and one ring disengaged therefrom. The channel $1^a$—$1^b$ acts as a hinge or "back bone" for the pad of leaves L which may form a pad, a copybook, a book or a similar stationery structure, with or without a cover.

The distance of the slots S from the adjacent edges of the leaves L is calculated of course for permitting the said leaves to be swung substantially to the extent of 360° about the retaining rings or loops 2 of the temporary binder, which ensures the required freedom of motion to the leaves. Moreover, the size of the rings 2 is so calculated as to enable them to internally accommodate the marginal slotted portions of the required number of leaves, which size may of course vary according to practical requirements.

The channel and rings of which the improved temporary binder as above described is made up are preferably formed integral with one another for the sake of convenience and may be colored, decorated or otherwise formed to match the æsthetical appearance of the pad, copybook or pack of leaves to be loosely bound.

Minor constructional details of the improved loose-leaf binder might of course be changed without departing from the spirit of the invention and the ambit of the subjoined claims.

What I claim is:

1. A temporary binder for loose leaves, comprising a bar bent longitudinally of its length in V-shape to form inner and outer members, a plurality of resilient spaced apart tongues integral with the inner member of the bar and extending from the free edge thereof and bent in ring-like form, the free ends of the tongues being bent to correspond with the inner angular surface of the outer member of the V-shape bar and adapted to snap behind the upper edge thereof to lock the tongues in closed position.

2. A temporary binder for loose leaves, comprising a bar bent longitudinally of its length in V-shape to form inner and outer members, a plurality of resilient spaced apart tongues integral with the inner member of the bar and extending from the free edge thereof and bent in ring-like form, the free ends of the tongues being bent to engage behind the inner angular surface of the outer member of the V-shape bar and adapted to snap behind the upper edge thereof to lock the tongues in closed position.

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